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Abstract

DESIGN OF AN ELECTROSTATIC PRECIPITATOR MONITORING SYSTEM FOR RUPTURED FUEL ELEMENT DETECTION

B.S. Prabhakar, R. Sethuraman, K. Srinivasan and K. Venkatachalam
Atomic Energy Establishment Trombay

The performance of an "Electrostatic Precipitator Monitor" for the detection of ruptured fuel elements was studied simulating the conditions of rupture at Apsara Reactor with air and CO_2 as carrier gases. Optimisation of parameters is indicated and design methods are discussed. Calculations were performed to determine the efficiency of the system taking into consideration the relevant fission product chains. Agreement between theoretical and experimental results is shown. The design was modified for water carrier system using air as scrubber gas. A monitor based on this design is being installed at Apsara Reactor.